

chip control

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode.

9. (Amended) A television comprising:

a tuner for receiving television radio wave;

a display panel operationally connected to said tuner, said display panel comprising:

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a substrate having an insulating surface;

at least one thin film transistor formed over said substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region, and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

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a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode.

14. (Amended) A portable computer having a display panel, said display panel comprising:

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a substrate having an insulating surface;

at least one thin film transistor formed over said substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region, and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

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a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode.

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20. (Amended) A device having at least one display device, said display device comprising:

a substrate having an insulating surface;

at least one thin film transistor formed over said substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region, and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode.

25. (Amended) A device having at least one display device, said display device comprising:

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a substrate having an insulating surface;

at least one thin film transistor formed over said substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region, and

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a first hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode and through a second hole of the organic resin film,

wherein the first hole and the second hole do not overlap to each other.

26. (Amended) A device having at least one display panel, said display panel comprising:

a substrate having an insulating surface;

at least one semiconductor layer formed over said substrate and comprising at least a channel region, source and drain regions with said channel region therebetween;

a gate insulating film adjacent to said channel region;

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an insulating film over at least said semiconductor layer;

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a lead electrode comprising aluminum formed over said insulating film and electrically connected to one of the source or drain regions through a first hole of said insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film over said insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said lead electrode through a second hole of the organic resin film.

27. (Amended) A television comprising:

a tuner for receiving television radio wave,

a display panel operationally connected to said tuner, said display panel comprising:

a substrate having an insulating surface;

at least one semiconductor layer formed over said substrate and comprising at least a channel region, source and drain regions with said channel region therebetween;

a gate insulating film adjacent to said channel region; and

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an insulating film over at least said semiconductor layer;

a lead electrode comprising aluminum formed over said insulating film and electrically connected to one of the source or drain regions through a first hole of said insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film over said insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said lead electrode through a second hole of the organic resin film.

28. (Amended) A portable computer having a display panel, said display panel comprising:

a substrate having an insulating surface;

at least one semiconductor layer formed over said substrate and comprising at least a channel region, source and drain regions with said channel region therebetween;

a gate insulating film adjacent to said channel region; and

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an insulating film over at least said semiconductor layer;

a lead electrode comprising aluminum formed over said insulating film and electrically connected to one of the source or drain regions through a first hole of said insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film over said insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said lead electrode through a second hole of the organic resin film.

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29. (Amended) A device having at least one display device, said display device comprising:

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- a substrate having an insulating surface;
 - at least one semiconductor layer formed over said substrate and comprising at least a channel region, source and drain regions with said channel region therebetween;
 - a gate insulating film adjacent to said channel region;
 - a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;
 - an insulating film over at least said semiconductor layer;
 - a lead electrode comprising aluminum formed over said insulating film and electrically connected to one of the source or drain regions through a first hole of said insulating film;
 - an organic resin film over said insulating film and said lead electrode to provide a leveled upper surface; and
 - a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said lead electrode through a second hole of the organic resin film,
- wherein the first hole and the second hole do not overlap to each other, and wherein during applying a reference signal having a varying voltage to the other one of the source or drain regions, a select signal is applied to the gate electrode in order to perform a gradation display.
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33. (Amended) A device having at least one display device, said display device comprising:

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- a substrate having an insulating surface;
 - at least one semiconductor layer formed over said substrate and comprising at least a channel region, source and drain regions with said channel region therebetween;
 - a gate insulating film adjacent to said channel region;

a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an insulating film over at least said semiconductor layer;

a lead electrode comprising aluminum formed over said insulating film and electrically connected to one of the source or drain regions through a first hole of said insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film over said insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said lead electrode through a second hole of the organic resin film,

wherein the first hole and the second hole do not overlap to each other.

34. (Amended) A portable computer having a display panel, said display panel comprising:

a substrate having an insulating surface;

at least one thin film transistor formed over said substrate, said thin film transistor including at least a channel region, source and drain regions with said channel region therebetween, a gate insulating film adjacent to said channel region, and a gate electrode adjacent to said channel region with said gate insulating film interposed therebetween;

a first signal line extending in a first direction over said substrate, said first signal line being contiguous to said gate electrode;

an interlayer insulating film covering said thin film transistor;

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a lead electrode comprising aluminum formed over said interlayer insulating film and electrically connected to one of the source or drain regions of said thin film transistor through a hole of said interlayer insulating film;

a second signal line formed over said interlayer insulating film and extending in a second direction orthogonal to said first direction, said second signal line electrically connected to the other one of the source or drain regions;

an organic resin film formed over the thin film transistor, said interlayer insulating film and said lead electrode to provide a leveled upper surface; and

a pixel electrode formed over said organic resin film, said pixel electrode being electrically connected to said thin film transistor via said lead electrode,

wherein during applying a reference signal having a varying voltage to the other one of the source or drain regions, a select signal is applied to the gate electrode in order to perform a gradation display.
